

REMARKS

Applicant would like to thank the Examiner for the detailed remarks. Claims 1, 2, 6-9, 18, 20 and 22-25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Schlüter (3,975,128) in view of Nennecker (5,498,151). The Examiner acknowledges that Schlüter fails to teach an arcuate portion at an end segment of an injection piston, but argues that it would have been obvious for one of ordinary skill in the art to modify the apparatus of Schlüter to have a circular mold valve chamber and an arcuate end portion of an injection piston as taught by Nennecker. Applicant respectfully disagrees.

It is not obvious to employ an injection piston 3 with an arcuate end portion in Schlüter. The base reference Schlüter teaches away from including an injection piston having an end segment that includes an arcuate portion. Schlüter teaches “a piston 3 having a planar end face 7” (column 3, lines 12-13) wherein the piston 3 “is advanced until its end face 7 lies flush with the wall 13 of the chamber 12” (column 3, lines 10-12). As illustrated in Figures 2-4, the chamber 12 has a planar surface (13, 14, 15). Adapting Schlüter to include a piston 3 having an end segment that includes an arcuate portion would result in the piston not being flush with the wall 13 of the chamber 12. This is contrary to the teachings of Schlüter.

It is also not obvious to adapt the chamber 12 of Schlüter to have a circular cross section. Schlüter teaches that “...at least one portion of the inner surface of the quieting chamber is formed as a planar region” (column 2, lines 33-34) and that “[t]he width of the opening of the mixing chamber into the quieting chamber is narrower than the width of the planar region so that when the piston has a planar end face it can be held in a position exactly flush and contiguous with this surface so as to allow the piston of the quieting chamber to neatly sweep all of the mixture out of the quieting chamber and into the mold” (column 2, lines 37-44). As illustrated in Figures 2-4, the chamber 12 has a planar surface (13, 14, 15). Adapting Schlüter to contain a circular mold valve chamber would result in the inner surface of the quieting chamber not having a planar region. This is also contrary to the teachings of Schlüter.

Additionally, the Examiner stated that “...it would have been obvious for one of ordinary skill in the art to modify the apparatus of Schluter with a circular mold valve chamber and an arcuate end portion of the injection piston as taught by Nennecker the mold valve chamber of Schluter need not change cross-section from a circular cross section to a half circle due to a flat piston end face in an attempt to have a closed off cross section at the junction between the mold valve chamber and injection valve chamber.” Applicant respectfully requests clarification of this statement.

Claims 3-5, 10, and 15-17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Schlüter (3,975,128) in view of Nennecker (5,498,151) as applied to claims 1, 2, 6-9, 18, 20, and 22-25, and in further view of Walker (3,655,208) and Jepsen (3,373,999). However, as argued above, the claimed invention is not obvious in view of the Schlüter and Nennecker references, and the Examiner has failed to provide a motivation for combining the Schlüter and Nennecker references. Claims 3-5, 10 and 15-17 depend on allowable claims 1 and 6 and are therefore allowable. Applicant respectfully requests that this rejection be withdrawn.

The Examiner also argues that claims 10, 15, and 17 do not teach a structural limitation and merely state that the air injection system communicates in response to a position of a mold valve piston. The Examiner argues that this is akin to a process of using the apparatus in response to a condition and provides no structural limitation. However, claim 10 recites "a gas injection system" and claim 15 recites "a gas source," which are both components of the molding system of claim 6, and claim 15 recites "a gas source," which is a component of the mold valve assembly of claim 1. Applicant respectfully requests that the rejection be withdrawn.

New claims 26 and 27 recite that "a diameter of said injection piston is less than a diameter of said mold valve chamber," and find support in Figures 4A and 4B.

Thus, claims 1-10, 15-18, 20, and 22-27 are in condition for allowance. No additional fees are seen to be required. If any additional fees are due, however, the Commissioner is authorized to charge Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, P.C., for any additional fees or credit the account for any overpayment. Therefore, favorable reconsideration and allowance of this application is respectfully requested.

Respectfully Submitted,

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